2.1.4.2 NPAC SMS broadcasts network data to appropriate Service Providers

Upon receipt of the activation notification, the NPAC SMS broadcasts the network update data in real time to the appropriate Service Providers' Local SMSs.

2.1.4.3 Failure - notify NPAC

If the NPAC SMS does not receive positive acknowledgment of the broadcast from all Service Providers, the NPAC SMS will rebroadcast the network data download to the Service Providers that did not acknowledge the original broadcast. The NPAC SMS will perform the rebroadcast a tunable number of times within a tunable time frame.

2.1.4.4 Initiate repair procedures

If the tunable rebroadcast parameters have been exceeded, the NPAC staff will initiate repair processes with the appropriate Service Providers. The NPAC SMS will send the list of Service Providers associated with each failed or partial failure subscription version to the old and new Service Providers.

2.1.5 Service providers perform network updates

Upon receiving the network data download broadcast from the NPAC SMS, all Ser. ice Providers' local SMSs will confirm the receipt of the download broadcast, and update their network elements. The Service Providers may also test their network changes.

CN2-1.5.1. **Service Provider's Network Change Validation Activities Are Beyond The Scope Of The NPAC SMS**

Network testing performed by the Service Providers, such as testing of call processing and testing of Service Provider network elements, is beyond the scope of the NPAC SMS.

2.2 Disconnect Process

This process flow defines the activities associated with the discontinuance of service for a ported number. The NPAC Disconnect Service flow is shown in Appendix A, *Flow 2.2 NPAC SMS Disconnect Process*, on page 7.

2.2.1 Customer notification, Service Provider initial disconnect service order activities

When a ported number is being disconnected, the customer and Service Provider will agree on a date. The Service Provider will send a notification to the NPAC SMS indicating the date of the physical disconnect of the number and, optionally, the date that the disconnect information is to be broadcast to all Local SMSs (the 'effective release date').

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2.2.2 NPAC waits for effective release date

The NPAC SMS will send delete actions containing the disconnect information based on the effective release date specified by the Service Provider. If no effective release date is specified on the disconnect request, the NPAC SMS processes the request immediately.

2.2.3 NPAC donor notification

The NPAC SMS will broadcast the effective release date and disconnect date to the donor SOA.

2.2.4 NPAC performs broadcast download of disconnect data

The NPAC SMS will broadcast the disconnect information to all Service Providers. If the broadcast is not acknowledged, the disconnect information will be resent a tunable number of times within a tunable time frame. If the tunable parameters for the collection of responses have been exceeded, the NPAC staff will initiate repair processes with the appropriate Service Providers (Flow 2.3), and send a list of failed Service Providers to the current Service Provider.

2.3 Repair Service Process

This process flow defines the activities performed when a problem is detected either by the NPAC SMS, a Service Provider, or by a customer who contacts a Service Provider. The repair service flow is shown in Appendix A, *Flow 2.3 NPAC SMS Repair Process*, on page 8.

2.3.1-A Service provider receives problem notification from customer

2.3.1-B Service provider receives problem notification from another Service Provider

2.3.1-C Service provider receives problem notification from NPAC SMS

2.3.2 Service provider analyzes the problem

If NPAC SMS intervention is needed to resolve the problem, up to three repair actions may be required before repairs can be initiated.

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2.3.2-A Subscription data query required

If a Subscription data query is required to initiate the repair, a query is launched to the Local Service Providers.

2.3.2-B Subscription data audit required

If a Subscription data audit is required before the repair can be initiated, an audit is initiated with the local Service Providers.

2.3.2-C Network synchronization required

If network synchronization is required, the process flows to 2.3.5, Request broadcast of subscription data.

2.3.3 Service provider performs repairs

There will be audit capabilities in the NPAC SMS to aid in isolating problems.

CN2-3.3.1   Service provider's repair activities are beyond the scope of the NPAC SMS

Details of steps in the repair processes that do not involve the NPAC or NPAC SMS, such as the customer's notification of problems, the Service Provider's analysis/troubleshooting activities and the Service Provider's repair activities are beyond the scope of the NPAC SMS functionality.

2.3.4 Request broadcast of subscription data

There will be audit capabilities in the NPAC SMS to aid in isolating problems. A Service Provider may request a download of subscription data to assist in the repair process, if necessary.

2.3.5 Broadcast repaired subscription data

If inaccurate routing data is found, the NPAC SMS will broadcast the correct subscription data to any involved Service Provider's networks to correct inaccuracies.

2.4 Conflict Process

This process flow defines the activities performed when Service Providers disagree on who will serve a particular customer. The conflict flow is shown in Appendix A, *Flow 2.4.1 Conflict Process*, on page 9.

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2.4.1 Subscription version in conflict

A Subscription Version may be put into a conflict state either by the old Service Provider (assuming certain conditions are true), or as a result of a failure to acknowledge a Subscription Version in Cancel-Pending state by the new Service Provider (see *Figure 11-7* in Appendix A). Subscription Versions set to either conflict or cancel initiate the creation of an entry in the Subscription Cause Code field identifying the cause of the status change.

2.4.1.1 Cancel-Pending Acknowledgment missing from new Service Provider

If the new Service Provider has not yet acknowledged a Subscription Version in Cancel-Pending state, the Subscription Version is put into Conflict, and the Cause Code is updated accordingly.

2.4.1.2 Old Service Provider requests conflict status

If the old Service Provider requests that a Subscription Version be put in conflict, it must be the first time the request has been made (a request to put a Subscription Version in conflict can only be made once by the old Service Provider), and the request must be received in the NPAC a tunable number of hours prior to 12:00 A.M. of the new Service Provider due date. If either one of these conditions has not been satisfied by the old Service Provider, the Subscription Version cannot be put into conflict.

2.4.1.3 Change of status upon problem notification

Subscription version's conflict status "on" is achieved when a Service Provider notifies NPAC SMS personnel of a disagreement between the new and old Service Providers as to whether or not a TN may be ported. The old Service Provider can only place a "pending" Subscription Version in "conflict" one time.

2.4.1.4 Change of status upon Old Service Provider non-concurrence

A Subscription Version creation with authorization set to "False" from the Old Service Provider causes the NPAC SMS to place the Subscription Version in conflict during the "Create Version" process (2.1.2).

2.4.1.5 Change of status upon New Service Provider non-concurrence

Non-concurrence from the New Service Provider causes the NPAC SMS to cancel the Subscription Version during the "Create Version" process (2.1.2).

2.4.2 New Service Provider coordinates conflict resolution activities

The New and Old Service Providers use internal and inter-company processes to resolve the conflict. If the conflict is resolved, the new Service Provider sets the Subscription Version status to pending. If the conflict is not resolved

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with the tunable maximum number of days, the NPAC SMS cancels the Subscription Version, and sets the Cause Code for the Subscription Version.

2.4.2.1 Cancel pending notification

The new Service Provider may also cancel the Subscription Version, effectively taking it out of the conflict state. If the Subscription Version was previously in a cancel-pending state **AND** the Service Provider requesting the cancellation did **NOT** provide concurrence for that cancellation request, then that request will be accepted and the Subscription Version will be placed in cancel-pending. Otherwise, the request will be rejected.

CN2.4.2.1.   **Service provider's conflict resolution activities are beyond the scope of the SMS NPAC**

Details of steps in the processes that do not involve the NPAC or NPAC SMS, such as conflict resolution escalation and arbitration activities are beyond the scope of this document.

2.4.3 Subscription version cancellation

If the Subscription Version status has been set to conflict "on" for 30 days [tunable parameter] and no resolution has occurred, the NPAC SMS will cancel the Subscription Version, set the Cause Code for the Subscription Version, and notify both the old and new Service Providers of the cancellation.

2.4.4 Conflict resolved

When both Service Providers agree to resolve the conflict, the new Service Provider will send a request to the NPAC SMS to change the Subscription Version status to pending.

2.5 Disaster Recovery and Backup Process

This process flow defines the backup and restore activities performed by the NPAC and the Service Providers. The disaster recovery flow is shown in Appendix A, *Flow 2.5 NPAC SMS Disaster Recovery Process*, on page 10.

2.5.1 NPAC personnel determine downtime requirement

If there is planned downtime for the NPAC SMS, the NPAC SMS will send an electronic notification to the Service Providers' SOAs that includes information on when the downtime will start, how long it will be, and if they will be required to switch to the backup or disaster recovery machine. Downtime is considered planned when the NPAC can provide notification to the Service Providers at least 24 hours in advance.

If there is unplanned downtime, the NPAC will assess how long the primary machine will be down. The NPAC will notify all of the Service Providers by electronic notification and telephone calls to the Service Providers' contact numbers. The notification will describe the situation and the planned action. The Service Providers will attempt to switch to the backup NPAC.

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2.5.2 NPAC notifies Service Providers of switch to backup NPAC and start of cutover quiet period

The NPAC Service Providers will switch to the backup or disaster recovery machine as indicated in the notification.

2.5.3 Service providers connect to backup NPAC

The Service Providers must use an alternate connection route to the backup NPAC and establish associations with the backup NPAC application.

2.5.4 Backup NPAC notifies Service Providers of application availability and end of cutover quiet period

When the backup NPAC application and database are on-line, processes will proceed as normal. The backup NPAC application will be at the same version level as the primary NPAC application. The NPAC SMS database will also contain the same routing information as the primary database.

2.5.5 Service providers conduct business using backup NPAC

The Service Provider should continue to process as normal when connected to the backup NPAC. If a Service Provider does use internal processes to request updates to SCPs while waiting to be able to send them to the backup machine, the Service Provider will still resend the updates when the backup NPAC can begin processing them in order to ensure that every Service Provider and the NPAC SMS receive the update.

2.5.6 Backup NPAC notifies Service Providers of switch to primary NPAC and start of cutover quiet period

When the primary machine is brought back up, the backup NPAC will advise the Service Providers of the timing of their switch back to the primary machine. At this time the backup NPAC will stop taking updates.

2.5.7 Service providers reconnect to primary NPAC

The Service Providers re-establish associations with the primary NPAC application using their normal connections.

2.5.8 Primary NPAC notifies Service Providers of availability and end of cutover quiet period

When the primary NPAC is available, NPAC personnel will notify Service Providers of the end of the cutover quiet period.

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2.6 Service Order Cancellation Process

This flow defines the process performed when a Service Provider cancels a service order. The service order cancellation flow is shown in Appendix A, *Flow 2.6 Cancellation Process*, on page 11.

2.6.1 Service Provider issues service order cancellation

From the time both Service Providers have sent a valid notification of a new Subscription Version to the time the Subscription Version is activated, either Service Provider may send a message to the NPAC SMS to cancel the Subscription Version. If this occurs, the NPAC SMS will notify both Service Providers that the Subscription Version is in a cancel-pending state.

2.6.2 Service provider cancels an un-concurred Subscription Version

If a Service Provider issues a cancel on a Subscription Version that was created by that Service Provider and not concurred to by the other Service Provider involved in that port, or if the Subscription Version was initiated, then subsequently canceled by the NPAC, the Subscription Version will be canceled immediately and a notification will be sent to both Service Providers.

2.6.3 NPAC requests missing acknowledgment from Service Provider

When notified that a Subscription Version has been set to cancel-pending, both Service Providers must concur by returning a cancel-pending acknowledgment to the NPAC SMS within 18 hours [tunable parameter]. If the NPAC does not receive acknowledgment in the allowable time from one of the Service Providers, a request is sent to that Service Provider for a cancel-pending-acknowledgment. If the missing cancel-pending-acknowledgment is not received within a tunable time frame, the Subscription Version status is set to "conflict" if it is the new Service Provider that failed to acknowledge, but is set to cancel if the old Service Provider failed to acknowledge. In either case, the Cause Code is then set for the Subscription Version, and both Service Providers are then notified of the Subscription Version status change.

2.6.4 NPAC cancels the Subscription Version and notifies both Service Providers

When acknowledgment is received from both Service Providers, within the allowed time frame the NPAC SMS will set the Subscription Version to canceled in its database, update the Cause Code for the Subscription Version, and notify both Service Providers that the Subscription Version has been canceled. All canceled Subscription Versions are purged from the NPAC database after a tunable period.

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2.7 Audit Request Process

This process flow defines the activities performed by the NPAC when Service Providers request audits of LNP data. The audit request flow is shown in Appendix A, *Flow 2.7 Audit Process*, on page 12.

2.7.1 Service provider requests audit

Any Service Provider can request an audit of another Service Provider's LSMS.

2.7.2 NPAC SMS issues queries to appropriate Service Providers

Upon receipt of an audit request, the NPAC SMS queries the appropriate Service Provider's Local SMS databases.

2.7.3 NPAC SMS compares Subscription Version data

The NPAC SMS compares its own Subscription Version data to the data it finds in the targeted Local SMS Subscription Version databases.

2.7.4 NPAC SMS updates appropriate Local SMS databases

The NPAC SMS updates Subscription Version information in the appropriate Local SMS databases.

2.7.5 NPAC SMS sends report of audit discrepancies to requesting SOA

2.7.6 NPAC SMS sends report of audit results to requesting SOA

2.8 Report Request Process

This process flow defines the activities performed by the NPAC when the Service Providers request report generation and delivery. The report request flow is shown in Appendix A, *Flow 2.8 Report Process*, on page 12.

2.8.1 Service provider requests report

2.8.2 NPAC SMS generates report

2.8.3 Report delivered via NPAC Administrative or SOA Low-Tech Interface, Email, electronic file, fax, printer

2.9 Data Administration Requests

This section defines the activities performed by the NPAC when Service Providers make a manual request for data administration.

2.9.1 Service provider requests administration of data by NPAC personnel

Service provider personnel are able to contact NPAC personnel to request data administration activities.

2.9.2 NPAC SMS personnel confirms user's privileges

Before NPAC personnel fulfill the data administration request, they will confirm the user's privileges and validate the request.

2.9.3 NPAC SMS personnel inputs user's request

Upon validation of the request, NPAC personnel will input the request.

2.9.4 NPAC SMS performs user's request

The NPAC SMS processes the request.

2.9.5 NPAC SMS personnel logs request denial if user's privileges are not validated

If the user's privileges are not confirmed, or the request cannot be validated, the NPAC personnel log the activity and end the process.

---

3. NPAC Data Administration

3.1 Overview

The NPAC SMS manages the ported TN information associated with Service Provider portability for the LNP service. This section describes the high level requirements associated with managing ported telephone numbers from an operations perspective. Figure 3-1 illustrates the logical data model associated with the data elements for the NPAC SMS, and the relationship between NPAC Customer data and other data tracked or created by the system.

AR3-1 Greenwich Mean Time

Specific time of day references in the Functional Requirements Specification are assumed to be in Greenwich Mean Time (GMT).
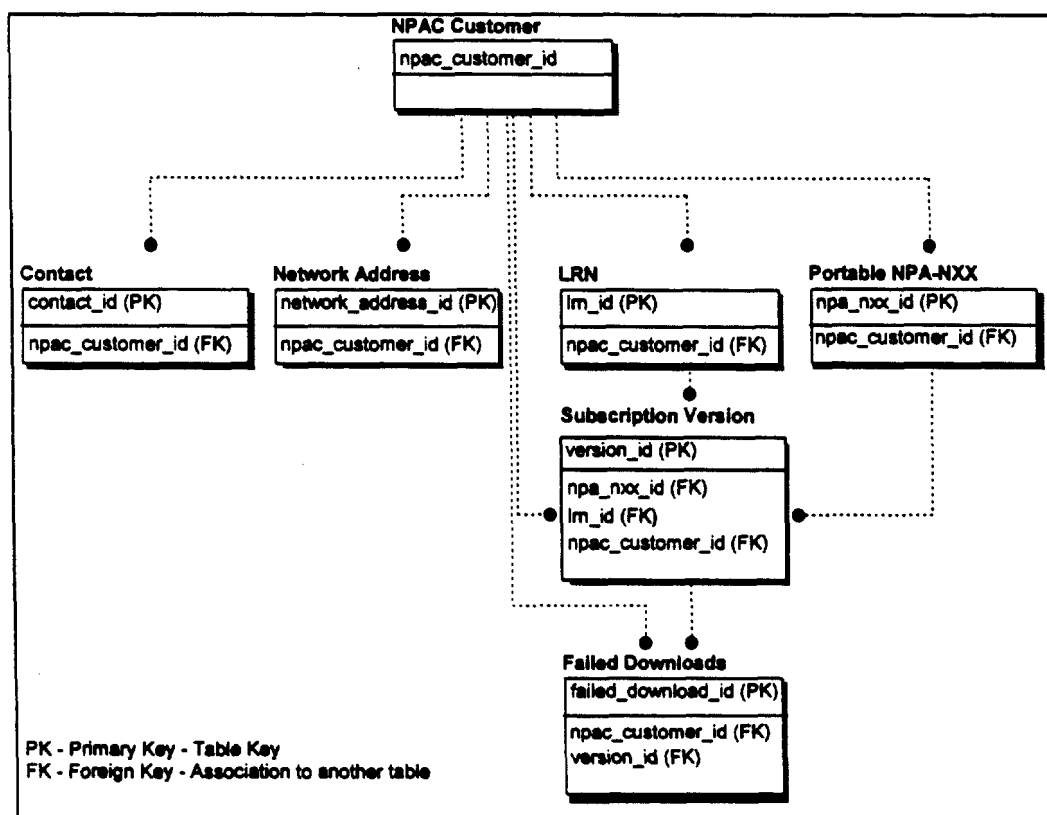

Figure 0-1 Entity Relationship Model

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3.1.1 Data Type Legend

The following table describes the data types used in the data models.

DATA TYPE LEGEND	
Data Type	**Description**
Address	Network Address: raw binary data stored as unformatted bytes.
B	Boolean (True or False) indicator.
C	Character or Alphanumeric strings.
E	Enumeration.
M	Bit Mask comprised of one or more bytes.
N	Numeric data (up to 32 bit integer, numeric data that can be arithmetically manipulated).
N(x)	Character string of "x" digits only.
T	Timestamp: month, day, year, hour, minute, and seconds.
TN	Telephone Number: 3-digit NPA, 3-digit NXX, 4-digit Station Number.

Table 0-1 Data Type Legend

3.1.2 NPAC Customer Data

NPAC Customer Data contains information about NPAC customers participating in the LNP service. The data items that need to be administered by NPAC Customer Data Management are represented in Table 3-2, Table 3.3, and Table 3-4.

NOTE: A check in the "Required" column means that this attribute must exist in the record before the record is considered useable.

NPAC CUSTOMER DATA MODEL			
Attribute Name	**Type (Size)**	**Required**	**Description**
NPAC Customer ID	C (4)	√	An alphanumeric code which uniquely identifies an NPAC Customer.

NPAC CUSTOMER DATA MODEL			
Attribute Name	**Type (Size)**	**Required**	**Description**
NPAC Customer Name	C (40)	√	A unique NPAC Customer Name.
NPAC Customer Allowable Functions	M	√	Each bit in the mask represents a boolean indicator for the following functional options: • SOA Management • SOA Network Data Management • LSMS Network Data Management • LSMS Data Download • LSMS Queries/Audits

Table 0-2 NPAC Customer Data Model

NPAC CUSTOMER CONTACT DATA MODEL			
Attribute Name	**Type (Size)**	**Required**	**Description**
NPAC Customer Contact ID	N	√	A unique sequential number assigned upon creation of the Contact record.
NPAC Customer ID	C (4)	√	An alphanumeric code which uniquely identifies an NPAC Customer.
Contact Type	C (2)	√	The type of NPAC Customer Contact Organization. Valid values are: • BI - Billing • CF - Conflict Resolution Interface • LI - Local SMS Interface • NC - NPAC Customer • NF - Network and Communications Facilities Interface • OP - Operations • RE - Repair Center Contact Organization • SE - Security • SI - SOA System Interface • UA - User Administration • WI - Web Interface

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NPAC CUSTOMER CONTACT DATA MODEL			
Attribute Name	**Type (Size)**	**Required**	**Description**
Contact	C (40)	√	Name of NPAC Customer Contact Organization.
Contact Address Line 1	C (40)	√	Contact Organization address Line 1.
Contact Address Line 2	C (40)	√	Contact Organization address Line 2.
Contact City	C (20)	√	Contact Organization city.
Contact State	C (2)	√	Contact Organization state.
Contact Zip	C (9)	√	Contact Organization zip code or postal code.
Contact Country	C (2)	√	Contact Organization country.
Contact Province	C (2)		Contact Organization province.
Contact Phone	TN	√	Contact Organization phone number.
Contact Fax	TN		Contact Organization Fax phone number.
Contact Pager	TN		Contact Organization Pager phone number.
Contact Pager PIN	C (10)		Contact Organization Pager Personal Identification Number (PIN).
Contact Email	C (60)		Contact Organization E-mail address.

Table 0-3 NPAC Customer Contact Data Model

NPAC CUSTOMER NETWORK ADDRESS DATA MODEL			
Attribute Name	**Type (Size)**	**Required**	**Description**
NPAC Customer Network Address ID	N	√	A unique sequential number assigned upon creation of the Network Address record.
NPAC Customer ID	C (4)	√	An alphanumeric code which uniquely identifies an NPAC Customer.
Network Address Type	C (1)	√	Type of Network Address. Valid values are: • S - SOA interface • L - Local SMS interface

NPAC CUSTOMER NETWORK ADDRESS DATA MODEL			
Attribute Name	**Type (Size)**	**Required**	**Description**
NSAP Address	Address (20)	√	OSI Network Service Access Point Address
TSAP Address	Address (4)		OSI Transport Service Access Point Address.
SSAP Address	Address (4)	√	OSI Session Service Access Point Address.
PSAP Address	Address (4)	√	OSI Presentation Service Access Point Address.
Internet Address	Address (12)		Internet address of the Service Provider Web interface.

Table 0-4 NPAC Customer Network Address Data Model

3.1.3 Subscription Version Data

Subscription Version Data consists of information about the ported TNs. The data items that need to be administered by Subscription Version Data Management functions are identified in Table 3-5:

SUBSCRIPTION VERSION DATA MODEL			
Attribute Name	**Type (Size)**	**Required**	**Description**
Version ID	N	√	A unique sequential number assigned upon creation of the Subscription Version.
LRN	TN	√	The LRN is an identifier for the switch on which portable NPA-NXXs reside.
Old Service Provider ID	C (4)	√	Old Service Provider ID.
New Service Provider ID	C (4)	√	New Service Provider ID.
TN	TN	√	Subscription Version telephone number.
Local Number Portability Type	E	√	Number Portability Type. Valid enumerated values are: • LSSP - Local Service Provider Portability (0) • LISP - Local Intra-Service Provider Portability (1)
Status	E	√	Status of the Subscription Version. The default value is P for Pending. Valid enumerated values are:

SUBSCRIPTION VERSION DATA MODEL			
Attribute Name	Type (Size)	Required	Description
			• X - Conflict (0) • A - Active (1) • P - Pending (2) • S - Sending (3) • F - Failed (4) • PF - Partial Failure (5) • DP - Disconnect Pending (6) • O - Old (7) • C - Canceled (8) • CP - Cancel Pending (9)
CLASS DPC	N (9)	√	DPC for 10-digit GTT for CLASS features.
CLASS SSN	N (3)	√	CLASS SSN for the Subscription Version.
LIDB DPC	N (9)	√	DPC for 10-digit GTT for LIDB features.
LIDB SSN	N (3)	√	LIDB SSN for the Subscription Version.
CNAM DPC	N (9)	√	DPC for 10-digit GTT for CNAM features.
CNAM SSN	N (3)	√	CNAM SSN for the Subscription Version.
ISVM DPC	N (9)	√	DPC for 10-digit GTT for ISVM features.
ISVM SSN	N (3)	√	ISVM SSN for the Subscription Version.
New Service Provider Due Date	T	√	The due date planned by the new Service Provider for Subscription Version Transfer.
Old Service Provider Due Date	T	√	The due date planned by the old Service Provider for Subscription Version Transfer.
Old Service Provider Authorization	B		A boolean indicator set by the old Service Provider to indicate authorization or denial of Transfer of Service for the Subscription Version to the new Service Provider.
New Service Provider Create Time Stamp	T		The date and time that the New Service Provider authorized Transfer of Service of the Subscription Version.
Old Service Provider Authorization Time	T		The date and time that the old Service Provider authorized Transfer of Service for the Subscription Version.

SUBSCRIPTION VERSION DATA MODEL			
Attribute Name	**Type (Size)**	**Required**	**Description**
Stamp			
Activation Request Time Stamp	T		The date and time that the Subscription Version activation request was made by the new Service Provider.
Activation Broadcast Date	T		The date and time that broadcasting began to all local SMS systems for the activation of the Subscription Version.
Activation Broadcast Complete Time Stamp	T		The date and time that at least one Local SMS system successfully acknowledged the broadcast or the retries were exhausted for the activate.
Disconnect Request Time Stamp	T		The date and time that the Subscription Version disconnect request was made by the local Service Provider.
Disconnect Broadcast Time Stamp	T		The date and time that broadcasting began to all local SMS systems for the disconnect of the Subscription Version.
Disconnect Broadcast Complete Time Stamp	T		The date and time that at least one Local SMS system successfully acknowledged the broadcast or the retries were exhausted for the disconnect.
Effective Release Date	T		The date that the Subscription Version is to be deleted from all Local SMS systems.
Customer Disconnect Date	T		The date that the Customer's service was disconnected.
Pre-Cancellation Status	E		Status of the Subscription Version prior to cancellation. Valid enumerated values are: • X - Conflict (0) • P - Pending (2) • DP - Disconnect Pending (6)
Old Service Provider Cancellation Time Stamp	T		The date and time that the Old Service Provider acknowledged that the Subscription Version be canceled.
New Service Provider Cancellation Time Stamp	T		The date and time that the New Service Provider acknowledged that the Subscription Version be canceled.
Cancellation Time Stamp	T		The date and time that the Subscription Version became canceled.

SUBSCRIPTION VERSION DATA MODEL			
Attribute Name	**Type (Size)**	**Required**	**Description**
Old Time Stamp	T		The date and time that the Subscription Version became old.
Conflict Time Stamp	T		The date and time that the Subscription Version was last placed in conflict.
Conflict Resolution Time Stamp	T		The date and time that the resolution of a Subscription Version in conflict is acknowledged.
Create Time Stamp	T	√	The date and time that this Subscription Version record was created.
Modified Time Stamp	T	√	The date and time that this Subscription Version record was last modified. The default value is the Create Time Stamp.
Porting to Original	B	√	A boolean that indicates whether the Subscription Version created is to be ported back to the original Service Provider. The default value is False.
End User Location Value	C (12)		For future use.
End User Location Value Type	C (2)		For future use.
Modify Request Timestamp	T		The date and time that the Subscription Version Modify request was made.
Modify Broadcast Timestamp	T		The date and time that broadcasting began to all local SMS systems for the modification of the Subscription Version.
Modify Broadcast Complete Timestamp	T		The date and time that all local SMS systems successfully acknowledged or the retries were exhausted for the modification of the Subscription Version
Billing ID	C (4)		For future use. The default value is the Facilities Based Service Provider ID.
Status Change Cause Code	N (2)		Used to specify reason for conflict when old Service Provider Authorization is set to False, or to indicate NPAC SMS initiated cancellation. Valid values are:

SUBSCRIPTION VERSION DATA MODEL			
Attribute Name	**Type (Size)**	**Required**	**Description**
			• No value • General Conflict • LSR Not Received • FOC Not Issued • Due Date Mismatch • Vacant Number Port • NPAC SMS Automatic Conflict from Cancellation • NPAC SMS Automatic Cancellation

Table 0-5 Subscription Version Data Model

3.1.4 Network Data

The network data represents the attributes associated with network topology and routing data with respect to local number portability. This information is used by the respective network elements to route ported numbers to the new termination points. The data items that need to be administered by Network Data Administration functions are identified in Table 3-6, Table 3-7, and Table 3-8:

PORTABLE NPA-NXX DATA MODEL			
Attribute Name	**Type (Size)**	**Required**	**Description**
NPA-NXX Id	N	√	A unique sequential number assigned upon creation of the NPA-NXX record.
NPA-NXX	C (6)	√	The NPA-NXX open for porting.
NPAC Customer ID	C (4)		An alphanumeric code which uniquely identifies an NPAC customer.
NPA-NXX Effective Date	T	√	The date that the NPA-NXX is available for LNP in the NPAC Customer networks.
Split new NPA	C (6)		The new NPA-NXX for an NPA split.
Split Activation Date	T		The date that the new NPA-NXX becomes available for use in an NPA split. This date represents the beginning of the permissive dialing period.
Split Disconnect Date	T		The data that the old NPA-NXX becomes unavailable for use in an NPA split. This date represents the end of the permissive dialing period.
NPA-NXX has been	B	√	A boolean that indicates if any TN within this NPA-NXX

PORTABLE NPA-NXX DATA MODEL			
Attribute Name	**Type (Size)**	**Required**	**Description**
Ported			has been ported. The default value is false, indicating that no TN within this NPA-NXX has yet been ported.

Table 0-6 Portable NPA-NXX Data Model

LRN DATA MODEL			
Attribute Name	**Type (Size)**	**Required**	**Description**
LRN ID	N	√	A unique sequential number assigned upon creation of the LRN record.
LRN	TN	√	The LRN is the unique identifier for the switch on which the portable NPA-NXXs reside.
NPAC Customer ID	C (4)	√	An alphanumeric code which uniquely identifies an NPAC Customer.

Table 0-7 LRN Data Model

LSMS FILTERED NPA-NXX DATA MODEL			
Attribute Name	**Type (Size)**	**Required**	**Description**
LSMS Filter NPA-NXX ID	N	√	A unique sequential number assigned upon creation of the LSMS Filtered NPA-NXX record.
NPAC Customer ID	C (4)	√	An alphanumeric code that uniquely identifies the LSMS NPAC Customer who is filtering subscription version broadcasts.
NPA-NXX	C (6)	√	The NPA-NXX for which the LSMS is filtering subscription version broadcasts.
Creation Timestamp	T	√	Date the filtered NPA-NXX was created.

Table 0-8 LSMS Filtered NPA-NXX Data Model

3.2 NPAC Personnel Functionality

The following requirements describe the functionality required by the NPAC SMS to support the daily operation of the Regional LNP SMS support staff. These requirements define the high level functionality required by the system with the specifics of each requirement defined in more detail in sections 4 and 5.

R3-1

DELETE

R3-2

DELETE

R3-3   **Create NPA-NXX data for a Service Provider**

NPAC SMS shall allow NPAC personnel to create a new LNP NPA-NXX for a Service Provider.

R3-4.1

(Duplicate - refer to R4-1)

R3-4.2

(Duplicate - refer to R4-3)

R3-5

(Duplicate - refer to R4-2)

R3-6   **Administer mass changes for NPA splits, LRN changes, LIDB changes, CLASS, ISVM and CNAM**

NPAC SMS shall allow NPAC personnel to perform NPA splits, LRN, LIDB, CLASS, ISVM and CNAM mass changes that affect multiple Subscription Versions, with version statuses of active, pending, conflict, cancel pending, deferred disconnect or failed.

R3-7.1   **Administer mass changes for one or more Subscription Versions**

NPAC SMS shall allow NPAC personnel to select Subscription Versions which match a user defined TN and specify a mass update action to be applied against all Subscription Versions selected (except for Subscription Versions with a status of old, partial failure, sending, or canceled).

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R3-7.2   Administer mass changes for one or more Subscription Versions for a TN range

NPAC SMS shall allow NPAC personnel to select Subscription Versions which match a TN range, and specify a mass update action to be applied against all Subscription Versions selected (except for Subscription Versions with a status of old, partial failure, sending, or canceled).

3.3 System Functionality

R3-8   Off-line batch updates for Local SMS Disaster Recovery

NPAC SMS shall support an off-line batch download (via 4mm DAT tape and FTP file download) to mass update Local SMSs with Subscription Versions and Service Provider Network data.

The contents of the batch download are:

- Subscriber data:
  - Version ID
  - TN
  - LRN
  - New Current Service Provider ID
  - Activation Request Timestamp
  - Version Status
  - CLASS DPC
  - CLASS SSN
  - LIDB DPC
  - LIDB SSN
  - ISVM DPC
  - ISVM SSN
  - CNAM DPC
  - CNAM SSN
  - End User Location - Value
  - End User Location - Type
  - Billing ID
  - LNP Type
  - Download Reason
  - Network data:
  - NPAC Customer ID
  - NPAC Customer name
- NPA-NXX-Download Data:
  - NPA-NXX ID
  - NPA-NXX Value
  - NPAC Customer ID
  - Effective TimeStamp
  - Download Reason
- LRN-Download Data:
  - LRN ID
  - LRN Value
  - Download Reason

R3-9   NPAC SMS download of network data to the Local SMS

NPAC SMS shall be able to communicate creation or deletion of NPA-NXX data and LRN data for a Service Provider to Local SMSs.

The contents of the network download are:

*   Network data:
    -   NPAC Customer ID
    -   NPAC Customer Name
*   NPA-NXX-Download Data:
    -   NPA-NXX ID
    -   NPA-NXX Value
    -   Effective TimeStamp
    -   Download Reason
*   LRN-Download Data:
    -   LRN ID
    -   LRN Value
    -   Download Reason

R3-10   NPAC SMS notification of NPA-NXX availability to the Service Providers

NPAC SMS shall inform all Service Providers about the availability of the NPA-NXXs for porting via the NPAC SMS to Local SMS interface or the Web bulletin board. The NPA-NXX data fields sent via the NPAC SMS to Local SMS interface are:

*   NPAC Customer ID
*   NPAC Customer Name
*   NPA-NXX ID
*   NPA -NXX Value
*   Effective Date
*   Download Reason

The NPA-NXX data fields sent to the WEB bulletin board are:

*   NPAC Customer ID
*   NPAC Customer Name
*   NPA-NXX Value
*   Effective Date

R3-11   NPAC SMS notification of LRNs and Service Provider data by Service Provider

NPAC SMS shall inform all Service Providers about a new Service Provider and the associated LRNs. NPAC SMS shall post the new Service Providers and/or new LRNs on the Web bulletin board.

The Service Provider data fields sent to the WEB bulletin board are:

*   NPAC Customer ID
*   NPAC Customer Name
*   NPAC Customer Type
*   Contact Type
*   Contact Name
*   Contact Address 1

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- Contact Address 2
- Contact City
- Contact State
- Contact Zip
- Contact Province
- Contact Country
- Contact Phone
- Contact Fax
- Contact Pager
- Contact Pager PIN
- Contact Email

The LRN data fields sent to the WEB bulletin board are:

- NPAC Customer ID
- NPAC Customer Name
- LRN Value

R3-12

(Duplicate - refer to R5-18)

R3-13   NPAC SMS mass change update capability to the Local SMS

NPAC SMS shall have the capability to identify all Subscription Versions affected by mass changes, (such as NPA splits), and automatically carry out the required updates to modified data in the Local SMSs.

3.4 Additional Requirements

RX3-1.1   Service Provider NPA-NXX Data Addition

NPAC SMS shall allow Service Providers to add their NPA-NXX data via the NPAC SMS to Local SMS interface or the SOA to NPAC SMS interface.

RX3-1.2   Service Provider LRN Data Addition

NPAC SMS shall allow Service Providers to add their LRN data via the NPAC SMS to Local SMS interface or the SOA to NPAC SMS interface.

RX3-2

DELETE

RX3-3.1   Service Provider NPA-NXX Data Deletion

NPAC SMS shall allow Service Providers to delete their NPA- NXX data via the NPAC SMS to Local SMS interface or the SOA to NPAC SMS interface provided the changes do not cause any updates to the Subscription Versions.

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RX3-3.2   Service Provider LRN Data Deletion

NPAC SMS shall allow Service Providers to delete their LRN data via the NPAC SMS to Local SMS interface or the SOA to NPAC SMS interface provided the changes do not cause any updates to the Subscription Versions.

3.5 Requirements Defined in Post-Award Activities

RN3-1   NPA Split Permissive Dialing

NPAC SMS shall support a permissive dialing period, during which dialing of both NPAs is allowed during NPA splits.

RN3-2   NPA split

NPAC SMS shall accept both the old and new NPAs during the permissive dialing period, but will only respond and download with the new NPA.

RN3-3   NPA Split Permissive Dialing Cleanup

NPAC SMS shall perform an update to remove NPAC SMS mapping and deactivate Subscription Versions associated with an NPA split after the expiration date of the permissive dialing period.

RR3-1   Service Provider Download Indicator

NPAC SMS shall provide a mechanism for the Service Provider to indicate whether or not they want NPA-NXX data and LRN data downloaded to their Local SMS via the NPAC SMS to Local SMS Interface.

RR3-2   Service Provider Download Indicator Default

NPAC SMS shall download NPA-NXX data and LRN data via the NPAC SMS to Local SMS Interface if the indicator is ON.

R3-14   Bulk Database Extracts

NPAC SMS shall periodically perform NPAC SMS database extracts of active Subscription Versions on an NPA-NXX basis to an ASCII file.

R3-15   FTP Site for Database Extracts

NPAC SMS shall store database extract files at the NPAC SMS FTP site for Local SMS file retrieval.

R3-16   Database Extract File Creation

NPAC SMS shall allow NPAC personnel to specify database extract file creation on a weekly, monthly, or quarterly basis.

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R3-17 Scope of Database Extract File Creation

NPAC SMS shall allow NPAC personnel to specify an NPA-NXX for database extract file creation.

RR3-3 NPAC SMS Input Restrictions

NPAC SMS shall prevent the entry of pipe characters (|) as part of text strings.

RR3-4 Create LRN data for a Service Provider

NPAC SMS shall allow NPAC personnel to create a new LRN for a service provider.

3.6 Requirements Defined in Change Orders

RR3-5 Create Filtered NPA-NXX for a Local SMS

NPAC SMS shall allow a Service Provider to create a filtered NPA-NXX for a given Local SMS, via the NPAC SMS to Local SMS interface and the SOA to NPAC SMS interface, which results in the SMS broadcasting subscriptions with the filtered NPA-NXX to the Local SMS.

RR3-6 Delete Filtered NPA-NXX for a Local SMS

NPAC SMS shall allow a Service Provider to delete a filtered NPA-NXX for a given Local SMS, via the NPAC SMS to Local SMS interface and the SOA to NPAC SMS interface, which results in the SMS **NOT** broadcasting subscriptions with the filtered NPA-NXX to the given Local SMS.

RR3-7 Query Filtered NPA-NXXs for a Local SMS

NPAC SMS shall allow a Service Provider to query filtered NPA-NXXs for a given Local SMS via the NPAC SMS to Local SMS interface and the SOA to NPAC SMS interface.

RR3-8 Query Filtered NPA-NXXs - NPA-NXX Not Provided

NPAC SMS shall return to the requesting Service Provider all filtered NPA-NXXs for a given Local SMS when the NPA-NXX is **NOT** input upon a Filter NPA-NXX Query via the NPAC SMS to Local SMS interface and the SOA to NPAC SMS interface.

RR3-9 Query Filtered NPA-NXXs - NPA-NXX Provided

NPAC SMS shall return to the requesting Service Provider a single NPA-NXX for a given Local SMS when the NPA-NXX is input upon a filtered NPA-NXX Query via the NPAC SMS to Local SMS interface and the SOA to NPAC SMS interface.

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